

SEQUENCE LISTING

<110> Davis, Heather L
Whalen, Robert G
Michel, Marie-Louise

<120> Nucleotide Vector, Composition Containing Such Vector and Vaccine
for Immunization Against Hepatitis

<130> C1040.70012US00

<150> US09/146072
<151> 1998-09-02

<160> 1

<170> PatentIn version 3.2

<210> 1
<211> 5618
<212> DNA
<213> Unknown

<220>
<223> Oligonucleotide vector

<300>
<302> Nucleotide vector, composition containing such vector and vaccine
for immunization against hepatitis
<308> A4471 GenBank, EMBL, DDBJ
<309> 1997-03-07
<310> WO9511307
<312> 1995-03-27

<400> 1
gacggatcgg gagatctccc gatcccctat ggctcgactct cagtacaatc tgctctgatg 60
ccgcatagtt aagccagtat ctgctccctg cttgtgtgtt ggaggctcgt gagtagtgcg 120
cgagcaaaat ttaagctaca acaaggcaag gcttgaccga caattgcatg aagaatctgc 180
ttaggggttag gcgttttgcg ctgcttcgcg atgtacgggc cagatatacg cgttgacatt 240
gattattgac tagttattaa tagtaatcaa ttacgggggc attagttcat agcccatata 300
tggagttccg cgttacataa cttacggtaa atggcccgcg tggctgaccg cccaacgacc 360
cccgcccatt gacgtcaata atgacgtatg ttcccatagt aacgccaata gggactttcc 420
attgacgtca atgggtggac tatttacggg aaactgcca cttggcagta catcaagtgt 480
atcatatgcc aagtacgccc cctattgacg tcaatgacgg taaatggccc gcctggcatt 540
atgccagta catgacctta tgggactttc ctacttggca gtacatctac gtattagtca 600
tcgctattac catggtgatg cggttttggc agtacatcaa tgggcgtgga tagcggtttg 660
actcacgggg atttccaagt ctccacccca ttgacgtcaa tgggagtttg ttttggcacc 720
aaaatcaacg ggactttcca aaatgtcgta acaactccgc cccattgacg caaatgggcg 780
gtaggcgtgt acggtgggag gtctatataa gcagagctct ctggctaact agagaacca 840

ctgcttaact ggcttatcga aattaatacg actcactata gggagaccca agcttggtac	900
cgggcccccc ctcgaggatt ggggaccctg cgctgaacat ggagaacatc acatcaggat	960
tcctaggacc ccttctcgtg ttacaggcgg ggtttttctt gttgacaaga atcctcacia	1020
taccgcagag tctagactcg tgggtggactt ctctcaattt tctaggggga actaccgtgt	1080
gtcttggcca aaattcgcag tccccaacct ccaatcactc accaacctct tgtcctccaa	1140
cttgtcctgg ttatcgctgg atgtgtctgc ggcgttttat catcttcctc ttcattcctgc	1200
tgctatgcct catcttcttg ttgggttcttc tggactatca aggtatgttg cccgtttgtc	1260
ctctaattcc aggatcctca acaaccagca cgggaccatg cgggacctgc atgactactg	1320
ctcaaggaac ctctatgtat ccctcctggt gctgtaccaa accttcggac ggaaattgca	1380
cctgtattcc catcccatca tcctgggctt tcggaaaatt cctatgggag tgggcctcag	1440
cccgtttctc ctgggtcagt ttactagtgc catttggtca gtgggttcgta gggctttccc	1500
ccactgtttg gctttcagtt atatggatga tgtggtattg ggggccaagt ctgtacagca	1560
tcttgagtcc ctttttaccg ctgttaccaa ttttcttttg tctttgggta tacatttaaa	1620
ccctaacaaa acaaagagat ggggttactc tctaaatttt atgggttatg tcattggatg	1680
ttatgggtcc ttgccacaag aacacatcat acaaaaaatc aaagaatgtt ttagaaaact	1740
tcctattaac aggctattg attggaaagt atgtcaacga attgtgggtc ttttgggttt	1800
tgctgcccct ttacacaaat gtgggttatcc tgcgttgatg cctttgtatg catgtattca	1860
atctaagcag gctttcactt tctcgccaac ttacaaggcc tttctgtgta aacaatacct	1920
gaacctttac cccgttgccc ggcaacggcc aggtctgtgc caagtgtttg ctgacgcaac	1980
cccactggc tggggcttg tcatgggcca tcagcgcgatg cgtggaacct tttcggctcc	2040
tctgccgatc catactgcgg aactcctagc cgcttgtttt gctcgcagca ggtctggagc	2100
aaacattatc gggactgata actctgttgt cctatcccgc aaatatacat cgtttccatg	2160
gctgctaggc tgtgctgcca actggatcct gcgcgggacg tcctttgttt acgtcccgtc	2220
ggcgtgaat cctgcggacg acccttctcg gggtcgcttg ggactctctc gtccccttct	2280
ccgtctgccg ttccgaccga ccacggggcg cacctctctt tacgcggact ccccgctctg	2340
gccttctcat ctgccggacc gtgtgcactt cgcttcacct ctgcacgtcg catggagacc	2400
accgtgaacg cccaccaaatt attgcccaag gtcttacata agaggactct tggactctca	2460
gcaatgtcaa cgaccgacct tgaggcatac ttcaaagact gtttgtttaa agactgggag	2520
gagttggggg aggagattag gttaaaggctc tttgtactag gaggtgtag gcataaattg	2580
gtctgcgcac cagcaccatg caactttttc acctctgcct aatcatctct tgttcatgtc	2640
ctactgttca agcctccaag ctgtgccttg ggtggctttg gggcatggac atcgaccctt	2700
ataaagaatt tggagctact gtggagttac tctcgttttt gccttctgac ttctttcctt	2760

cagtacgaga tctggccagg atccactagt tctagagcgg ccgccaccgc ggtggagctc	2820
cagcttttgt tccctttagt gagggttaat tgcgcgcatg cccgacggcg aggatctcgt	2880
cgtgacccat ggcgatgcct gcttgccgaa tatcatgggtg gaaaatggcc gcttttctgg	2940
attcatcgac tgtggccggc tgggtgtggc ggaccgctat caggacatag cgttggctac	3000
ccgtgatatt gctgaagagc ttggcggcga atgggctgac cgcttcctcg tgctttacgg	3060
tatcgccgct cccgattcgc agcgcacgc cttctatcgc cttcttgacg agttcttctg	3120
agcgggactc tggggttcga aatgaccgac caagcgacgc ccaacctgcc atcacgagat	3180
ttcgattcca ccgccgcctt ctatgaaagg ttgggcttcg gaatcgtttt ccgggacgcc	3240
ggctggatga tcctccagcg cggggatctc atgctggagt tcttcgcca cccaacttg	3300
tttattgcag cttataatgg ttacaaataa agcaatagca tcacaaattt cacaaataaa	3360
gcattttttt cactgcattc tagttgtggt ttgtccaaac tcatcaatgt atcttatcat	3420
gtctggatcc cgtcgacctc gagagcttgg cgtaatcatg gtcatagctg tttcctgtgt	3480
gaaattgtta tccgctcaca attccacaca acatacgagc cggaagcata aagtgtaaag	3540
cctgggggtgc ctaatgagtg agctaactca cattaattgc gttgcgctca ctgcccgtt	3600
tccagtcggg aaacctgtcg tgccagctgc attaatgaat cggccaacgc gcggggagag	3660
gcggtttgcg tattgggcgc tcttcgctt cctcgctcac tgactcgctg cgctcggtcg	3720
ttcggctgcg gcgagcggta tcagctcact caaaggcggg aatacggtta tccacagaat	3780
caggggataa cgcaggaaag aacatgtgag caaaaggcca gcaaaaggcc aggaaccgta	3840
aaaaggccgc gttgctggcg tttttccata ggctccgccc ccctgacgag catcacaaaa	3900
atcgacgctc aagtcagagg tggcgaaacc cgacaggact ataaagatac caggcgtttc	3960
cccctggaag ctccctcgtg cgctctcctg ttccgaccct gccgcttacc ggatacctgt	4020
ccgcctttct cccttcggga agcgtggcgc tttctcaatg ctcacgctgt aggtatctca	4080
gttcggtgta ggtcgttcgc tccaagctgg gctgtgtgca cgaaccccc gttagccccg	4140
accgctgcgc cttatccggt aactatcgtc ttgagtccaa cccggtaaga cacgacttat	4200
cgccactggc agcagccact ggtaacagga ttagcagagc gaggtatgta ggcggtgcta	4260
cagagttctt gaagtgggtg cctaactacg gctacactag aaggacagta tttggtatct	4320
gcgctctgct gaagccagtt accttcggaa aaagagttgg tagctcttga tccggcaaac	4380
aaaccaccgc tggtagcggg ggtttttttg tttgcaagca gcagattacg cgagaaaaa	4440
aaggatctca agaagatcct ttgatctttt ctacggggtc tgacgctcag tggaacgaaa	4500
actcacgtta agggattttg gtcatgagat tatcaaaaag gatcttcacc tagatccttt	4560
taaattaaaa atgaagtttt aaatcaatct aaagtatata tgagtaaact tggctctgaca	4620

gttaccaatg cttaatcagt gaggcaccta tctcagcgat ctgtctattt cgttcatcca	4680
tagttgcctg actccccgtc gtgtagataa ctacgatacg ggagggctta ccatctggcc	4740
ccagtgctgc aatgataccg cgagaccac gctcacggc tccagattta tcagcaataa	4800
accagccagc cggaagggcc gagcgcagaa gtggtcctgc aactttatcc gcctccatcc	4860
agtctattaa ttgttgccgg gaagctagag taagtagttc gccagttaat agtttgcgca	4920
acgttggtgc cattgctaca ggcacgtgg tgtcacgctc gtcgtttggt atggcttcat	4980
tcagctccgg ttcccaacga tcaaggcgag ttacatgatc ccccatgttg tgcaaaaaag	5040
cggtagctc cttcggtcct ccgatcgttg tcagaagtaa gttggccgca gtgttatcac	5100
tcatggttat ggcagcactg cataattctc ttactgtcat gccatccgta agatgctttt	5160
ctgtgactgg tgagtactca accaagtcac tctgagaata gtgtatgcgg cgaccgagtt	5220
gctcttgccc ggcgtcaata cgggataata ccgcgccaca tagcagaact ttaaaagtgc	5280
tcatcattgg aaaacgttct tcggggcgaa aactctcaag gatcttaccg ctgttgagat	5340
ccagttcgat gtaaccact cgtgcaccca actgatcttc agcatctttt actttcacca	5400
gcgtttctgg gtgagcaaaa acaggaaggc aaaatgccgc aaaaaaggga ataagggcga	5460
cacggaaatg ttgaatactc atactcttcc tttttcaata ttattgaagc atttatcagg	5520
gttattgtct catgagcgga tacatatttg aatgtattta gaaaaataaa caaatagggg	5580
ttccgcgcac atttccccga aaagtgccac ctgacgtc	5618